

What is claimed is:

1. A modular remote visual inspection system used to view a portion of an interior of an object of interest, comprising:
a base module comprising an optical source module, a computation module, and a power module;
an interconnection module having two ends, said interconnection module providing electrical and optical signal paths, a first end of said interconnection module in electrical and optical communication with said base module;
a unitary display and control module, said unitary display and control module in electrical and optical communication with a second end of said interconnection module; and
a demountable inspection module having two ends, a proximal end of said inspection module in at least optical communication with said unitary display and control module, and a distal end of said inspection module configured to make observations of an object of interest;
whereby said base module, said interconnection module, said unitary display and control module, and said demountable inspection module cooperate to permit a view of the portion of the interior of the object of interest.
2. The modular remote visual inspection system of claim 1, wherein said base module, said interconnection module, said unitary display module and control module and said demountable inspection module are configured to be stowed in an interconnected relationship.
3. The modular remote visual inspection system of claim 2, wherein said base module, said interconnection module, said unitary display module and control module and said demountable inspection module are configured to be deployed for use without alteration of the interconnected relationship that existed when stowed.
4. The modular remote visual inspection system of claim 1, wherein said base module, said interconnection module, said unitary display module and control module and said

demountable inspection module are configured to be transported in one hand of a user.

5. The modular remote visual inspection system of claim 1, wherein said base module, said interconnection module, said unitary display and control module, and said demountable inspection module are configured to be transported in one hand of a user.

6. The modular remote visual inspection system of claim 1, wherein said base module has defined on a side thereof at least one aperture for use with storage media.

7. The modular remote visual inspection system of claim 6, wherein the at least one aperture is configured to accept a storage medium selected from the group consisting of optical storage media, magnetic storage media, and electronic storage media.

8. The modular remote visual inspection system of claim 7, wherein the optical storage media comprise a selected one of a CD-R, a CD-RW, and a DVD.

9. The modular remote visual inspection system of claim 7, wherein the electronic storage media comprise a selected one of a PC card, a PCMCIA card, a Compact Flash card, an SD memory, and an SDIO memory.

10. A modular visual inspection system for viewing the interior of a structure, comprising:

- a base unit element comprising a memory element, a processor element, and a light source;

- a control and display element comprising a screen element for viewing the interior of the structure and an articulation control element;

- a plurality of insertion elements for imaging the interior of the structure, each of said plurality of said insertion elements comprising an imaging sensor and an elongated braided portion,

- wherein the base unit element is in electro-optical communication with the control

and display element, and

wherein each one of said plurality of insertion elements can be used without modification with said control and display element.

11. The modular visual inspection system of claim 10, wherein the base unit element further comprises a fluid reservoir.

12. The modular visual inspection system of claim 10, wherein the base unit element further comprises a keyboard.

13. The modular visual inspection system of claim 10, wherein the base unit element has defined on a side thereof at least one aperture for use with storage media.

14. The modular visual inspection system of claim 13, wherein the at least one aperture is sized to allow insertion of a storage media selected from the group consisting of: optical storage media, magnetic storage media, and electronic storage media.

15. The modular visual inspection system of claim 14, wherein the optical storage media comprise CD-Rs, CD-RWs, and DVDs.

16. The modular visual inspection system of claim of claim 14, wherein the magnetic storage media comprise floppy disks and magnetic tape.

17. The modular visual inspection system of claim 14, wherein the electronic storage media comprise PC cards, PCMCIA cards, Compact Flash cards, SD memory, and SDIO memory.

18. The modular visual inspection system of claim 10, wherein the processor element of the base unit element is capable of video compression.

19. The modular visual inspection system of claim 10, wherein the base unit further comprises at least one connectivity element.
20. The modular visual inspection system of claim 19, wherein the at least one connectivity element is selected from the group of connectivity elements consisting of: serial ports, USB ports, Firewire® (IEEE 1394) ports, and infrared communication ports.
21. The modular visual inspection system of claim 10, wherein the light source is modular.
22. The modular visual inspection system of claim 21, wherein the modular light source is selected from the group of light sources consisting of: LEDs, arc discharge lamps, lasers, UV lamps, and IR lamps.
23. The modular visual inspection system of claim 10, further comprising a storage reel for storing said plurality of insertion elements.
24. The modular visual inspection system of claim 10, further comprising a container element sized such that the base unit element fits within the container element.
25. The modular visual inspection system of claim 24, wherein the container element is weatherproof.
26. The modular visual inspection system of claim 10, wherein the control and display element comprises a LCD configured to show images in a 16:9 format.
27. The modular visual inspection system of claim 10, wherein the control and display element comprises an anti-glare element.
28. The modular visual inspection system of claim 10, wherein the control and display

element comprises a joystick.

29. The modular visual inspection system of claim 28, wherein the control and display element further comprises a switch to freeze an image displayed by said control and display element.

30. The modular visual inspection system of claim 10, wherein the control and display element comprises at least one servo motor.

31. The modular visual inspection system of claim 10, wherein the image sensor of each of said plurality of insertion elements gathers sufficient data to create a video signal selected from the group of video signals consisting of: PAL, NTSC, and progressive scan.

32. The modular visual inspection system of claim 31, wherein the video signal is selected by a user of the modular visual inspection system.

33. The modular visual inspection system of claim 10, wherein the memory element of the base unit element is capable of storing data representing images.

34. The modular visual inspection system of claim 10, wherein the memory element of the base unit element includes a computer program for generating reports based on data obtained by the imaging sensor of each of said plurality of insertion elements.

35. A modular visual inspection device for viewing a target area comprising:
a base unit;
a handset in electrical and optical communication with said base unit;
a plurality of interchangeable insertion tubes each having a differing cross-sectional dimension and comprising an imager for collecting data regarding the target area and at least one illumination bundle,
wherein the handset and base unit are adapted to be in electrical and optical

communication with each of said plurality of interchangeable insertion tubes.

36. The modular visual inspection device of claim 35 further comprising means for distortion correcting an image generated from the data collected by the imager.

37. The modular visual inspection device of claim 35, wherein the handset further comprises at least one motor.

38. The modular inspection device of claim 35, further comprising means for connecting the modular inspection device to a computer located at a remote location.

39. The modular inspection device of claim 35, further comprising means for providing entertainment to a user of the modular inspection device.

40. The modular inspection device of claim 35, further comprising means for storing the modular inspection device.